

Central Intelligence Agency



Washington, D. C. 20505

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10 JAN 1985

MEMORANDUM FOR: See Distribution

SUBJECT: STAR WARS Study by Soviet Scientists Reported
in the 7 January 1985 issue of The Washington
Post [redacted]

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1. The attached memorandum provides our views on the Soviet
STAR WARS study discussed on the front page of the 7 January 1985
issue of The Washington Post. [redacted]

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2. If you have any further questions, comments, or requests,
please contact me [redacted], or the Chief of the Directed Energy
Branch, [redacted]

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[redacted]
Director
Scientific and Weapons Research

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Attachment:
As stated

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Central Intelligence Agency



Washington, D.C. 20505

DIRECTORATE OF INTELLIGENCE

9 January 1985

STAR WARS STUDY BY SOVIET SCIENTISTS REPORTED IN THE
7 JANUARY 1985 ISSUE OF THE WASHINGTON POST []

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Summary

The Soviet STAR WARS (Strategic Defense Initiative) study discussed on page 1 of the 7 January 1985 issue of The Washington Post was not prepared for the Schultz-Gromyko talks. We believe that the report was written to serve as a propaganda tool against SDI. It was initially drafted in 1983 probably to reinforce the views of US scientists opposed to SDI. It was written by Soviet scientists with primarily civilian, not military, backgrounds. We believe that Soviet work on SDI-related technologies is being conducted by other scientists in other organizations. The report itself is generally superficial in its analysis and contains at least one technical error []

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Discussion

The paper discussed in "Soviets See US 'Deception'" on page 1 of the 7 January 1985 issue of The Washington Post is almost certainly a version of a previously disseminated Soviet report. That report is dated Moscow 1984, has the same coauthors as discussed in The Washington Post, and was done under the auspices of the Committee of Soviet Scientists for Peace, Against Nuclear Threat. The report has had various titles including "A Space-Based Anti-

This memorandum was prepared [] of the Office of Scientific and Weapons Research. Contributions were made by [] the Office of Central Reference. This memorandum has been coordinated with the Office of Soviet Analysis. Information available as of 7 January 1985 was used. Comments and queries are welcome and may be directed to the Chief, Directed Energy Branch, OSWR, []

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Missile System With Directed Energy Weapons: Strategic, Legal and Political Implications" and "Strategic and International-Political Consequences of Creating a Space-Based Anti-Missile System Using Directed Energy Weapons."

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According to a US scientist,

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the report was prepared by "nonprofessionals, people whose specialization is other than ballistic missile defense (BMD) systems, and that they used only overtly available information, mainly from the Western press." (After reviewing the backgrounds of the coauthors, we agree that they probably are not directly involved in BMD or space-based directed energy work.) In a side comment,

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Although roughly 90 percent of Soviet space efforts probably have military applications, the six scientific coauthors of this report are from an organization representing the relatively small civilian/scientific effort. This organization, the Institute of Space Research, has some functions similar to the US National Aeronautics and Space Administration (NASA). Nevertheless, some of its work has been in direct support of the military. However, judging from their backgrounds, the coauthors of the report are almost certainly not involved in the development of directed-energy systems. The other three coauthors of the report are from the Institute of the USA and Canada Studies and the Institute of the World of the Economy and International Relations. They are basically political scientists.

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The report asserts that space-based SDI systems are too technically complex, expensive, and easily counter-measured to be worthwhile. However, the report examines only one possible SDI variant in enough depth to show complexity and cost--namely a hydrogen fluoride chemical laser that could be implemented in the 1990s. Although mentioned, other possibilities, such as neutral particle beams, x-ray lasers, and krypton fluoride lasers, are not analyzed in as much detail. Other SDI concepts, e.g. ground-based terminal defense and space-based kinetic-energy weapons, are not discussed. Many of the ideas presented, particularly in the countermeasures area, were taken directly from the US open literature and do not represent original Soviet ideas.

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The report itself contains a glaring technical error. Namely, the equation for calculation of the potential kill range of a nuclear-driven x-ray laser is incorrect. The kill range obtained is too short for the assumptions used.

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We believe that the report was written to serve as a propaganda tool against SDI. The report apparently was written to reinforce the arguments used by US scientists against SDI. The report has wide distribution in the West but apparently little distribution inside the Soviet Union. To our knowledge, the arguments of technical complexity, high cost, and easy countermeasures have not been brought up in a totally Russian news medium.

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Rather, the Soviet media have argued that a SDI system would lead to a US first-strike capability, would be in violation of existing treaties, and would allow attack of ground targets from space. [REDACTED]

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The results of the report have been previously highlighted by the Soviet scientist responsible for the generation of the report, Ye. P. Velikhov, in an article in the May 1984 issue of the Bulletin of the Atomic Scientists. Dr. Velikhov also discussed some of the results of the report in the 24 June 1984 issue of The Washington Post. The report itself was also given to the United Kingdom and the Federal Republic of Germany in addition to select groups of US scientists. A 24-page draft of the report was made available to US scientists in October of 1983. [REDACTED]

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The report demonstrates the large amount of technical data about US concepts for SDI that can be gleaned from the open literature. These include missile vulnerabilities to laser and particle-beam irradiation, beam divergences for laser and particle-beam weapons, and output powers for these weapons, as well as estimates for the size and mass of a laser system. A total of 34 references to 15 US technical journals were made. Aviation Week and Space Technology and Astronautics and Aeronautics were cited more times than the other journals. Also, most of the references cited (23 out of 34) were published before 23 March 1983, the date of President Reagan's first announcement of SDI. [REDACTED]

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A few Soviet publications also are cited. One, entitled Space Must Be Peaceful, is authored by V.S. Avduyevskiy, who is probably head of a Soviet space-based laser weapon project. Another is a Soviet analysis of US press reports of classified US work on nuclear-explosive-pumped x-ray lasers. Other Soviet references on excimer, iodine, and free-electron lasers also may reflect classified Soviet work. None of this work was done by the coauthors of the report or even by their organizations. [REDACTED]

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